

rabbits were killed, edema, emphysema and hemorrhagic foci were found in the lungs. Similar syndromes were produced by successive passages of lung-tissue suspensions, the aerobic cultures of which were usually sterile. The material from the twelve cases that were either afebrile or convalescing or in the course of a secondary pneumonia produced no symptoms in the rabbits. All the control tests, which consisted of the injection into the lungs of rabbits of a saline solution, suspensions of normal rabbit lungs, normal rabbit serum, foreign protein, ordinary bacteria, including Pfeiffer's bacillus and its toxin as prepared by Parker's method and, finally, the nasopharyngeal secretions from fourteen apparently healthy persons, failed to show the "familiar clinical and pathological action." The same authors (*II, Jour. Exp. Med.*, 1921, xxxii, 361) obtained negative results when nasopharyngeal secretions from early cases of uncomplicated influenza were inoculated, intratracheally and subconjunctivally into *Macacus rhesus* monkeys. On further experimentation, it was found that the "active agent," as it existed in the nasopharyngeal secretions in man and in the lung of rabbits injected with human secretions, passed through Berkefeld V and N candles and was capable of producing the same effects in rabbits as the unfiltered material; that the peculiar effect encountered in the inoculated rabbit could be induced in guinea-pigs and the "agent" withstood the action of sterile 50 per cent glycerol for periods up to nine months. The effect on the rabbit lung of pure cultures of types of organism ordinarily encountered in the aerobic cultures of human nasopharyngeal secretions, alone or in combination with the "influenzal agent," was studied (*III, Jour. Exp. Med.*, 1921, xxxiii, 373). It was found that neither *B. Pfeifferi* nor its toxic extract when injected intratracheally into the lungs of rabbits induced changes similar to those described for the "influenzal agent" or produced a pneumonic consolidation or led directly to the death of the animals. From their works in this series the authors concluded that concurrent infections in the experiments described could be regarded as of accidental nature and were not causally related to the typical effects induced in rabbits by a material wholly free from ordinary bacteria and that the "influenzal agent" exerted an effect on the pulmonary tissue which encouraged the invasion of the lung and subsequent multiplication there of ordinary bacteria. They believed that a similarity existed between the conditions under which concurrent infections arose in the inoculated rabbits and those which seemed to favor the occurrence of concurrent infection during epidemic influenza in man. They call attention to the fact that death did not occur in rabbits as a result of the uncomplicated effects of the "influenzal agent" alone, death being seen only in those animals where concurrent infection of the lung by ordinary bacteria was present.

Albumin Reaction in Sputum.—Conclusions as to the value of albumin reaction as a diagnostic aid in tuberculosis have varied with different investigators since the first determination of Biermer in 1885. BURDICK and GAUSS (*Am. Rev. Tuberc.*, 1921, iv, 889) reported the results obtained in examining the sputum of 200 patients. Equal parts of sputum and 3 per cent acetic acid were mixed and the clear filtrate was tested by using the Esbach albuminometer tube commonly

employed in urinalysis. Albumin was found positive in 95 per cent of the patients with incipient, in 98.4 per cent of those with moderately advanced, and in 92.6 per cent of those with advanced tuberculosis. It was present in 26 unclassified cases of pulmonary tuberculosis and of all the tuberculous individuals examined, 96.3 per cent had a positive test. In 6 patients with chronic bronchitis and 2 with asthma, no albumin was found in the sputum, whereas 1 case of lobar pneumonia showed the presence of albumin. It was found that the quantity of albumin varied in the various cases from day to day. From their own investigations, the authors concluded that the test is of value as a diagnostic aid in pulmonary tuberculosis.

The Incidence of Bovine Infection in Tuberculous Meningitis.—Some investigators have found 15 per cent of tuberculous meningitis cases in man due to bovine strains. That 49 per cent of the cases in children under five years of age and only about 1 per cent in adults are of the bovine type is startling. Novick (*Jour. Med. Res.*, 1920, xli, 239) studied 48 strains of tubercle bacilli from the cerebrospinal fluid of as many unselected cases. Three of these were of bovine type. Indirect isolation was accomplished by subcutaneous injection of the guinea-pig, pure cultures being obtained by culture of inguinal lymph nodes on Dorset's plain egg or glycerin egg media. It was found that, while a moist growth on Dorset's medium was usually indicative of the bovine type, confirmation by demonstration of virulence in the rabbit was necessary. To a degree, the production of pigmentation on egg medium suggested a human origin of the tubercle bacilli, but this characteristic depended upon the age of the culture.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

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Studies of the Phenomenon of d'Hérelle with *Bacillus Dysenteriae*.—WOLLSTEIN (*Jour. Exp. Med.*, 1921, xxxiv, 467) states that the phenomenon of d'Hérelle is the expression of a lytic reaction occurring between a bacterium which is inducing an infection in an animal and a substance elaborated in that organism, probably by the leukocytes and other tissue cells, in response to the stimulus of the metabolic products of the invading bacterium. The important element